

# Thomas Research Products

Innovative & Energy Saving Lighting Controls

## 25W TRC-025DS Dimming Series

Switch Mode LED Drivers - Constant Current  
Long Life Model

Total Power: 24 Watts  
Input Voltage: 90-305 VAC  
Outputs: Single from 4 VDC to 72 VDC  
High Efficiency  
Indoor or Outdoor Applications  
Active Power Factor Correction  
IP66 Compliant

### Electrical Specifications

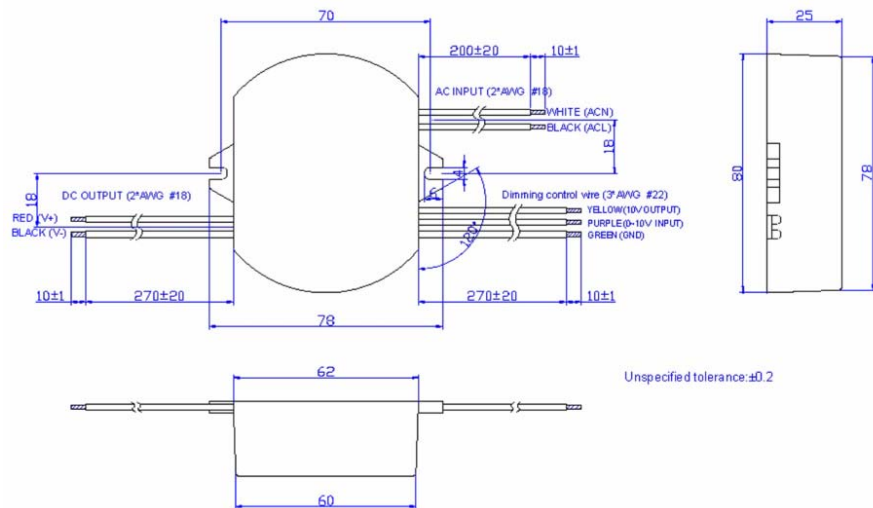
Input Voltage Range:	90 - 305 VAC,
Frequency:	47 to 63 Hz
Power Factor:	99% @ 110 VAC, 92% @ 220 VAC
Input Current:	0.32 A @ 110 VAC, 0.15 A @ 220 VAC
Efficiency:	80-85% typical at maximum load
Maximum Power:	25W
Line Regulation	2%
Load Regulation:	5%
Turn-on Time Delay	3 Seconds
Protection:	Output Over-Voltage, Output Over-Current, Output Short Circuit Protection with Auto Recovery

### Environmental Specifications

Operating Temperature:	-30°C to +70°C
Maximum Case Temp.	90°C
Storage Temperature:	-40°C to +85°C
Humidity:	5% to 100%
Cooling:	Convection
MTBF:	484,000 Hours @ 25°C, 80% Load, 110VAC on 2080 mA output model (MIL-HDBK-217F)
Lifetime	79,000 Hours @ 45°C, 80% Load, 110VAC on 2080 mA output model

Output Current (1)	Max Output Voltage	Typical Efficiency	Part Number
350 mA	24-72 VDC	85%	TRC-025S035DS
450 mA	19-56 VDC	84%	TRC-025S045DS
620 mA	13-40 VDC	83%	TRC-025S062DS
700 mA	12-36 VDC	83%	TRC-025S070DS
1050 mA	8-24 VDC	83%	TRC-025S105DS
1400 mA	6-18 VDC	82%	TRC-025S140DS
1750 mA	5-14 VDC	81%	TRC-025S175DS
2080 mA	4-12 VDC	80%	TRC-040S208DS

### Dimensions



### Safety and EMC Compliance

CUL CE	UL 8750 EN 61347-1, EN61347-2-13
EN 55015	Conducted emission
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations and flicker
EN 61000-4-2	Electrostatic discharge
EN 61000-4-3	RFE Field Susceptibility test
EN 61000-4-4	Electrical Fast Transient
EN 61000-4-6	Conducted Radio Frequency
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity

RoHS Compliant

10-16-09

# Thomas Research Products

Innovative & Energy Saving Lighting Controls

## 25W TRC-025DS Dimming Series

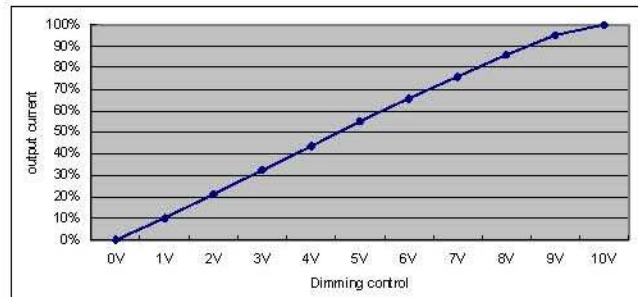
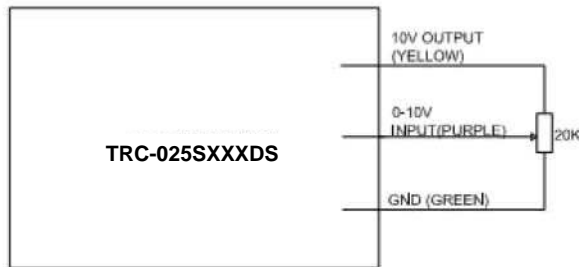
Switch Mode LED Drivers - Constant Current  
Long Life Model

Total Power: 24 Watts  
Input Voltage: 90-305 VAC  
Outputs: Single from 4 VDC to 72 VDC  
High Efficiency  
Indoor or Outdoor Applications  
Active Power Factor Correction  
IP66 Compliant

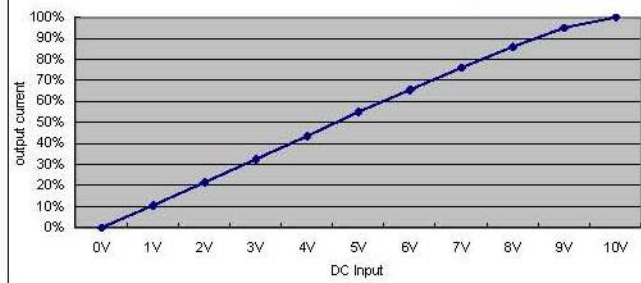
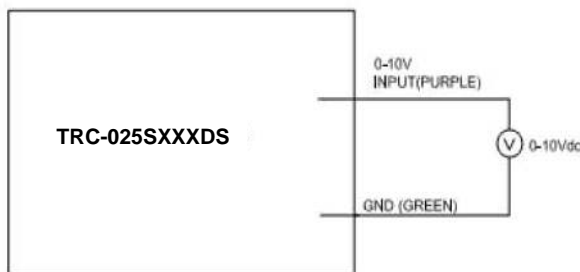
### Dimming Control Specifications

Parameter	Min.	Typ.	Max.	Notes
10V output voltage	9.8 V	10 V	10.2 V	
10V output source current	-10 mA	-	2 mA	
Absolute maximum voltage on the 0~10V input pin	-2 V	-	15 V	
Source current on 0~10V input pin	0 mA	-	1 mA	

The dimmer control may be operated from either a potentiometer or from an input signal of 0 – 10 Vdc. Two recommended implementations are provided below.



Implementation 1: Potentiometer Control



Implementation 2: DC input

#### Notes:

- For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 33% of the max. output voltage for any given model).
- If the output voltage is maintained above 50% of the maximum output voltage, the dimmer control may be operated over the entire 0-10V range with output current varying from 100% down to practically 0%.
- If the output voltage is maintained between 33-50% of the maximum output voltage, the dimmer control may be operated over 5-10V range with output current varying from 100% down to 50%. Dimming below 5V under these conditions is not guaranteed.